

Module specification

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Module Code	EN6C4
Module Title	Industrial Placement and Project
Level	6
Credit value	60
Faculty	FAST
HECoS Code	100184
Cost Code	GAME

Programmes in which module to be offered

Programme title	Is the module core or option for this programme
MEng Aeronautical Engineering	Core
MEng Mechanical and Mechanical Engineering	Core
MEng Automotive Engineering	Core
MEng Electrical and Electronic Engineering	Core
MEng Renewable and Sustainable Engineering	Core

Pre-requisites

None

Breakdown of module hours

Learning and teaching hours	0 hrs
Placement tutor support	0 hrs
Supervised learning e.g. practical classes, workshops	0 hrs
Project supervision (level 6 projects and dissertation modules only)	24 hrs
Total active learning and teaching hours	24 hrs
Placement / work based learning	420 hrs
Guided independent study	156 hrs
Module duration (total hours)	600 hrs

For office use only	
Initial approval date	22 nd August 2022
With effect from date	Sept 2022
Date and details of revision	
Version number	1

Module aims

- To provide students with the opportunity to practice the task management and problem-solving activities of a professional engineer and to explore original ideas.
- To exercise the student in applying and extending the methods, skills, information, knowledge and understanding obtained during the various parts of the programme to developing and evaluating an original design of an engineering product or system.
- To develop the knowledge and skills, through involvement and experience, to determine solutions to real engineering problems whilst working as a member of a team in industry.

Module Learning Outcomes - at the end of this module, students will be able to:

1	Develop personal skills of working with others at different levels and develop an awareness of personal strengths and limitations.
2	Analyse the operation and structure of an industrial organisation and the role of professional engineering within it.
3	Apply principles of running a business particularly financial control, costing and marketing.
4	Experience the completion of engineering tasks as a means of building confidence and competence.
5	Assess systems of communication and control in organisations especially as they affect quality and reliability.

In addition, to the module learning outcomes, student will also cover the following accreditation of higher education programme (AHEP) fourth edition learning outcomes: M6, M7, M8, M9, M10, M11, M12, M13, M14, M15, M16, M17, and M18.

Assessment

Indicative Assessment Tasks:

This section outlines the type of assessment task the student will be expected to complete as part of the module. More details will be made available in the relevant academic year module handbook.

This industrial placement has the value of 60 credits. A detailed grid showing assessment criteria is used but in summary the three main areas of assessment are:

Logbook: (5% of the assessment marks) An evidence portfolio built up by the student, including planning and development notes, a diary recording progress and reflective comments.

Presentation: (20% of the assessment marks) A final formal presentation which includes a poster display (5% of the assessment marks) and an oral presentation (15% of the assessment marks).

Report: (75% of the assessment marks) A formal written report (10000 words) to present your project work.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	All learning outcomes	Dissertation/Project	100%

Derogations

A derogation from regulations has been approved for this programme which means that whilst the pass mark is 40% overall, each element of assessment (where there is more than one assessment) requires a minimum mark of 30%.

Learning and Teaching Strategies

Independent project work, discussion with academic and industrial supervisors.

All the expected stages – contained in the learning outcomes list – should be observed and assessed. A structured approach using stage, or part, development/testing/evaluation will be expected. The on-going logs should be maintained by the student in the form of a logbook and the final product, together with a formal report, presented in an oral presentation and poster at the end of the exercise.

A series of seminars and small-group tutorials will be conducted to develop research and project methodology. The student is typically expected to have regular meetings with his/her personal supervisor every week or every two weeks, as required. During this time the logbook will form the main basis of the meeting; it should be signed and dated in an appropriate place by both the supervisor and supervisee so as to give a record of the meeting having taken place.

An active and inclusive approach is used to engage learners in the topics and will involve individual, group work and flipped learning experiences aligned to the university's Active Learning Framework (ALF). The approach offers students a flexible and adaptive learning experience that can accommodate a range of options that includes both on campus learning and remote learning where appropriate.

The Moodle VLE and other on-line materials and resources will be available to support learning. ALF offers a balance between the classroom elements and digitally enabled activity incorporating flexible and accessible resources and flexible and accessible feedback to support learning.

Indicative Syllabus Outline

The Industrial Placement is an integral component of the integrated MEng degree programmes. It will normally be for 16 weeks (including statutory holiday), from February to May (could be extended to September for some placement arrangements which require a longer students' involvements).

Although it will be the students' responsibility to find their own placement, the University via its Careers Centre will offer significant help and support. It is anticipated that an academic supervisor / placement officer will be in regular contact with both students and companies/organisations.

The industrial placement will expose the student to a wide range of professional competences which are part of the modern engineer's work. The industrial context of the project work is important, but the educational objectives will override commercial concerns.

An ideal project will provide the student with the opportunity for a background investigation and analysis of relevant science and technology, detailed design work and component selection, manufacture and assembly, and practical examination, communication and evaluation of the outcome. The work must not be exclusively analytical, but should include sufficient novelty to be a challenge to the student.

It is intended that the project be carried out in industry, under joint academic and industrial supervision. Provided the necessary monitoring and collaboration arrangements can be assured this can be overseas. The project will normally be conducted on an individual basis with the student collaborating closely with engineers in the company. In the event that a company can take on more than one student, the students may work together but must still work in close collaboration with experienced engineers and each student will have separately identified objectives and tasks.

In the event of a suitable placement not being available the student will work at the University but on a project which has direct involvement of an industrial partner.

This module is assessed entirely by means of Dissertation/Project.

Monitoring and Supervision

This industrial placement forms 50% of the assessment for Level 6 of the MEng programmes. The intended learning outcomes are critically dependent upon a productive relationship between the student, the industrial partner and the University. It is therefore essential that there is a good working relationship between the student and the industrial partner, and that the project topic is both suitable for the student and capable of delivering the educational objectives.

Preparation and planning for this industrial placement together with initial visits will start at the end Level 5 in order for arrangements to be established in October. By beginning of December, students will visit their intended placement with the Module Leader or his/her Academic Supervisor and the Placement Officer to devise the project outline. The objectives of the work to be undertaken by the student will be discussed and agreed with the employer (or work placement provider), the student and the Industrial Placement Module Leader/Academic Supervisor to ensure that the work to be undertaken by the student is both of value to the employer and meets the requirements of the module learning outcomes. Discussions proceed once work on the project has commenced to refine the specification, and precise role of the student within the overall activities of the industrial partner. Any additional input from the University should be defined at this stage (e.g. additional specialist supervision or other resources).

Regular monthly electronic progress reports are required from the student.

A written interim progress report, due one month into the project, forms the basis of a formal visit to the company and review by the Academic Supervisor and the Placement Officer with

input from the Industrial Supervisor. In addition to details of technical progress on the project the report must also outline background research and provide a Gantt chart for completion of the project. This review will include feedback from the industrial supervisor. A second formal visit to the student will be made either immediately before or just after the Easter vacation. Additional visits may be made as deemed necessary.

Indicative Bibliography:

Please note the essential reads and other indicative reading are subject to annual review and update.

Essential Reads

P. Bary-Kahn, et al., *A Practical Guide to Technical Reports and Presentations for Scientists, Engineers, and Students*. Pearson Learning Solutions, 2010.

Other indicative reading

J. M. Nicholas, *Project Management for Engineering, Business and Technology*, 6th ed. Routledge, 2020.

C. Neville, *The Complete Guide to Referencing and Avoiding Plagiarism*, 2nd ed. Open University Press, 2010.

Employability skills – the Glyndŵr Graduate

Each module and programme is designed to cover core Glyndŵr Graduate Attributes with the aim that each Graduate will leave Glyndŵr having achieved key employability skills as part of their study. The following attributes will be covered within this module either through the content or as part of the assessment. The programme is designed to cover all attributes and each module may cover different areas.

Core Attributes

Engaged
Enterprising
Creative
Ethical

Key Attitudes

Commitment
Curiosity
Resilience
Confidence
Adaptability

Practical Skillsets

Digital Fluency
Organisation
Leadership and Team working
Critical Thinking
Emotional Intelligence
Communication